

OFFICIAL

PATENTS  
107044-0002A8/B  
10.3.2

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:  
William P. Acker et al.

Serial No.: 09/718,148

Filed: November 21, 2000

For: FUEL CELL SYSTEM WITH  
ACTIVE METHANOL CON-  
CENTRATION CONTROL

Examiner: John S. Maples

Art Unit: 1745

Cesari and McKenna, LLP  
88 Black Falcon Avenue  
Boston, MA 02210  
November 20, 2002CERTIFICATE OF TRANSMISSION

I hereby certify that the following paper is being facsimile transmitted to the Patent and Trademark Office on November 20, 2002.

  
Meredith MurrayHonorable Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

AMENDMENT

Please replace claim 10 with the following amended version thereof to incorporate the changes on the accompanying mark-up page:

- b1
- 1 10. (Twice Amended) A method of regulating a concentration of methanol in a direct
  - 2 methanol fuel cell system comprising the steps of:
  - 3 using a detector to sense changes in an output power level of said fuel cell and pro-
  - 4 ducing a signal indicative of said changes; and

FAX RECEIVED  
NOV 21 2002  
GROUP 1700

PATENTS  
107044-0002

5 using said signal to drive a concentration regulator which responsively controls the amount  
6 of methanol supplied to said fuel cell's anode in response to changes sensed in said output  
7 power level.

Please replace claim 28 with the following amended version thereof to incorporate the changes on the accompanying mark-up page:

1 28. (Twice Amended) A method of regulating a concentration of fuel in a direct ox-  
2 idation fuel cell system comprising the steps of:  
3 sensing changes in potential at an anode or load level of said fuel cell system; and  
4 using said sensed changes in potential to drive a concentration regulator which re-  
5 sponsively controls the amount of methanol supplied to said fuel cell's anode when  
6 said power level increases and decreases, thereby minimizing cross-over of methanol  
7 through said fuel cell's membrane electrolyte.

Please add the following new claims:

Please add the following new claim 41:

1 41. (New) A method of regulating a concentration of methanol in a direct methanol fuel  
2 cell system comprising the steps of:  
3 providing a diffusion layer disposed between said anode and a source of methanol;  
4 and  
5 varying a rate of diffusion of methanol through said diffusion layer, thereby control-  
6 ling a methanol concentration at said anode.

(Please add the following new claim 42.)

1 42. (New) The method as in claim 41 wherein said rate of diffusion is varied by com-  
2 pressing or decompressing said diffusion layer.

PATENTS  
107044-0002

(Please add the following new claim 43.)

- 1 43. (New) The method as in claim 41 wherein said rate of diffusion is varied by changing  
2 a porosity of said diffusion layer.

(Please add the following new claim 44.)

- 1 44. (New) The method as in claim 41 wherein said rate of diffusion is varied by changing  
2 a tortuosity of said diffusion layer.